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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/783,326	02/20/2004	Michael J. Czaplicki	1001-133	6882
25215	7590	05/25/2006		
DOBRUSIN & THENNISCH PC 29 W LAWRENCE ST SUITE 210 PONTIAC, MI 48326				
			EXAMINER SELLERS, ROBERT E	
			ART UNIT 1712	PAPER NUMBER

DATE MAILED: 05/25/2006

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary

Application No.

10/783,326

Applicant(s)

CZAPLICKI ET AL.

Examiner

Robert Sellers

Art Unit

1712

– The MAILING DATE of this communication appears on the cover sheet with the correspondence address –

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 20 April 2006.
- 2a) ☐ This action is FINAL. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 10-19 and 24-30 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 10-19 and 24-30 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on _____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
- Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
- Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
- ☐ Certified copies of the priority documents have been received.
 - ☐ Certified copies of the priority documents have been received in Application No. _____.
 - ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- ☒ Notice of References Cited (PTO-892)
- ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- ☐ Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)
Paper No(s)/Mail Date _____
- ☐ Interview Summary (PTO-413)
Paper No(s)/Mail Date. _____
- ☐ Notice of Informal Patent Application (PTO-152)
- ☐ Other: _____

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1. The word "bisphenol" is misspelled in claim 24, line 3.
2. Due to the election of Group II in the election filed April 20, 2006, the potential obviousness-type double patenting rejection over copending application no. 11/188,010 discussed in the restriction and election of species requirement filed March 29, 2006 (page 6, paragraph 6) is no longer applicable.

The following is a quotation of the first paragraph of 35 U.S.C. 112:

The specification shall contain a written description of the invention, and of the manner and process of making and using it, in such full, clear, concise, and exact terms as to enable any person skilled in the art to which it pertains, or with which it is most nearly connected, to make and use the same and shall set forth the best mode contemplated by the inventor of carrying out his invention.

Claims 10-19 and 24-30 are rejected under 35 U.S.C. 112, first paragraph, as failing to comply with the enablement requirement. The claims contain subject matter which was not described in the specification in such a way as to enable one skilled in the art to which it pertains, or with which it is most nearly connected, to make and/or use the invention.

3. The "butyl nitrile rubber" described on page 3, line 32 and defined in claims 10 and 24, line 4 does not accurately designate the elastomer. A butyl rubber is a copolymer of isobutylene and diolefins such as butadiene or isoprene according to Hackh's Chemical Dictionary, page 118.

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The specification on page 5, Tables A and B exhibit "Carboxylated NBR Rubber Nipol 1472X" which is an acrylonitrile/butadiene/methacrylic acid rubber according to McGrail et al. Patent No. 6,103,730 in column 9, the Example 1 table. More favorable consideration would be given to the amendment of the "butyl nitrile rubber" to a "butadiene nitrile rubber" to more correctly denote the monomers.

The following is a quotation of the second paragraph of 35 U.S.C. 112:

The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention.

Claims 10-19 and 24-30 are rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention.

4. It is unclear how the epoxy component "is at least slightly reacted with the elastomer" as defined in independent claims 10 and 24 when the butyl [sic] nitrile rubber does not require the presence of any carboxyl groups. None of the species of elastomer listed on page 3, lines 24-32 necessitates the inclusion of carboxyl groups which are the only means of reaction with the epoxy resin to form the adduct. More favorable consideration would be given to page 4, line 11 to affirmatively disclose the presence of carboxy(l) groups by the modification of the phrase "may also include" to "includes" along with the denotation of the elastomer as a "carboxyl groups-containing butadiene nitrile rubber."

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5. The indication of the epoxy component "provided as a phenolic resin" in claims 14 and 24 unduly limits it to solely an epoxy novolac resin as set forth on page 2, line 32-33. More favorable consideration would be given to the deletion of the phrase "provided as a phenolic resin" to more concisely indicate that the epoxy component embraces epoxy novolac resins as well as the bisphenol A epoxy resins of claim 16.

The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(a) the invention was known or used by others in this country, or patented or described in a printed publication in this or a foreign country, before the invention thereof by the applicant for a patent.

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

(e) the invention was described in (1) an application for patent, published under section 122(b), by another filed in the United States before the invention by the applicant for patent or (2) a patent granted on an application for patent by another filed in the United States before the invention by the applicant for patent, except that an international application filed under the treaty defined in section 351(a) shall have the effects for purposes of this subsection of an application filed in the United States only if the international application designated the United States and was published under Article 21(2) of such treaty in the English language.

Claims 10, 11, 13-18, 24-26, 28 and 30 are rejected under 35 U.S.C. 102(b) as being anticipated by PCT Publication No. WO 95/33785 and Lee and Neville's Handbook of Epoxy Resins, page 4-60.

6. The PCT publication (page 12, Example 1; page 13, line 2 and page 14, Table 1, Sample 7/1) shows the reaction product of 17.5% by weight of Hycar 1472 acrylonitrile/butadiene/methacrylic acid rubber with 82.5% by weight of DER 661 diglycidyl ether of bisphenol A having an epoxy equivalent weight of from 475-575 which converts to a molecular weight of from 950-1150 (based on 2 epoxy equivalents per weight of the resin), and a melting point of from 70-80°C in the presence of ethyl triphenyl phosphonium iodide. Sample 7/1 is prepared via Reaction Route B wherein the rubber is reacted with the second epoxy resin (page 13, line 2) which is DER 661 (page 12, lines 23-24).

Claims 10-12, 14-16, 18, 24, 26 28 and 29 are rejected under 35 U.S.C. 102(b) as being anticipated by Urech et al. Patent No. 4,908,273.

7. Urech et al. in Example 1 (col. 6) shows an adduct prepared from 73.8% by weight of a bisphenol A diglycidyl ether and 19.8% by weight of a carboxyl-terminated butadiene/acrylonitrile rubber (HYCAR CTBN 1300 X 13) in the presence of triphenyl phosphine (col. 2, lines 52-58).

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Claims 10-12, 14, 16 and 18 are rejected under 35 U.S.C. 102(b) as being anticipated by Minamisawa et al. Patent No. 4,482,660.

8. Minamisawa et al. in Example 1 (col. 6) shows the reaction of 65% by weight of Araldite-720 (col. 2, lines 25-47, N,N,N',N'-tetraglycidylidiaminodiphenylmethane having an epoxy equivalent weight of from 110 to 150) with 35% by weight of a carboxyl-terminated butadiene/acrylonitrile rubber (Hycar CTBN 1300 X 13) in the presence of triphenyl phosphine (col. 4, lines 51-54).

Claims 10-12, 14, 16 and 24 are rejected under 35 U.S.C. 102(a and e) as being anticipated by Golden Patent No. 6,586,089.

9. Golden in Example 1 (col. 6) shows an epoxy-terminated adduct derived from 60.1% by weight of a liquid diglycidyl ether of bisphenol A and 39.9% by weight of a carboxyl-functional butadiene/acrylonitrile rubber (col. 2, lines 60-62) in the presence of triphenyl phosphine.

Claims 10, 15, 16, 18, 24 and 26 are rejected under 35 U.S.C. 102(b) as being anticipated by McKown.

10. McKown in Example 1 (col. 7) shows the reaction product of 81.4% by weight of Epon 1004 solid diglycidyl ether of bisphenol A (col. 3, line 75 to col. 4, line 5) and 18.6% by weight of Hycar CTBNX (col. 4, lines 62-66, a carboxylated acrylonitrile/butadiene copolymer).

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Claims 10, 15, 16, 18, 19, 24, 26 and 27 are rejected under 35 U.S.C. 102(e) as being anticipated by Czaplicki et al. Patent No. 6,846,559.

11. Czaplicki et al. (col. 1, lines 34-45; col. 3, line 31; and Col. 6, lines 22-27 and Table A) shows a blend of a liquid epoxy resin falling within the ambit of the reactive diluent of claims 19 and 27 and a solid epoxy-carboxyl terminated butyl nitrile (CTBN) adduct wherein the epoxy includes a bisphenol A epichlorohydrin ether polymer (col. 3, lines 8-10) in an amount of from about 16.7 to 83.3% by weight and a level of carboxyl-terminated butyl nitrile rubber of from about 16.7 to 83.3% by weight (col. 3, lines 23-25, converted from the epoxy to elastomer ratio of from about 1:5 to 5:1).

12. The PCT publication, Urech et al., Minamisawa et al., Golden, McKown and Czaplicki et al. inherently meet the viscosity at 100°C of claims 14 and 24 and the carboxyl contents for the elastomer of claims 18 and 26 based on the equivalent reaction products of bisphenol A epoxy resin and carboxyl-terminated butadiene/acrylonitrile rubber to that claimed.

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

Claims 19 and 27 are rejected under 35 U.S.C. 103(a) as being unpatentable over the PCT publication, Urech et al., Minamisawa et al., Golden, McKown and Czaplicki et al. in view of Japanese Patent No. 63-227686.

The claimed reactive diluent is not recited. The Japanese patent reports a blend of a carboxylated acrylonitrile/butadiene copolymer with a bisphenol A epoxy resin and a reactive diluent. It would have been obvious to include the reactive diluent of the Japanese patent with the reaction products of the PCT publication, Urech et al., Minamisawa et al., Golden, McKown and Czaplicki et al. in order to optimize the viscosity for subsequent processing. The claimed viscosity at 100°C and a shear rate of 400 s⁻¹ is a feature contingent upon the subsequent heating and shearing of the reaction product and is within the teachings of the combined prior art when the reactive diluent of the Japanese patent is added to optimize the viscosity.

Claims 17 and 25 are rejected under 35 U.S.C. 103(a) as being unpatentable over Urech et al., Minamisawa et al., Golden, Czaplicki et al. and McKown.

13. Urech et al. and Golden do not exemplify the claimed molecular weight, epoxy equivalent weight and softening point of the epoxy resin. The softening point of the Araldite-720 epoxy resin of Minamisawa et al. is not mentioned. Golden is open to the use of solid diglycidyl ethers of bisphenol A in column 3, lines 39-40.

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14. McKown epouses the formation of an epoxy resin-carboxylated acrylonitrile/butadiene rubber adduct with a Epon 1001 diglycidyl ether of bisphenol A having an epoxy equivalent weight of from 330-380 which converts to a molecular weight of from 660-760, and a softening point of from 65-74°C (col. 4, lines 3-4).

15. It would have been obvious to produce the epoxy resin-carboxylated acrylonitrile/butadiene rubber reaction products of the PCT publication, Urech et al. Golden, McKown and Czaplicki et al. with the Epon 1001 epoxy resin of McKown in order to obtain a solid reaction product (McKown, col. 4, lines 28-34).

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Robert Sellers whose telephone number is (571) 272-1093. The examiner can normally be reached on Monday to Friday from 9:30 to 6:00. The fax phone number for the organization where this application or proceeding is assigned is (571) 273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at (866) 217-9197 (toll-free).



Robert Sellers
Primary Examiner
Art Unit 1712